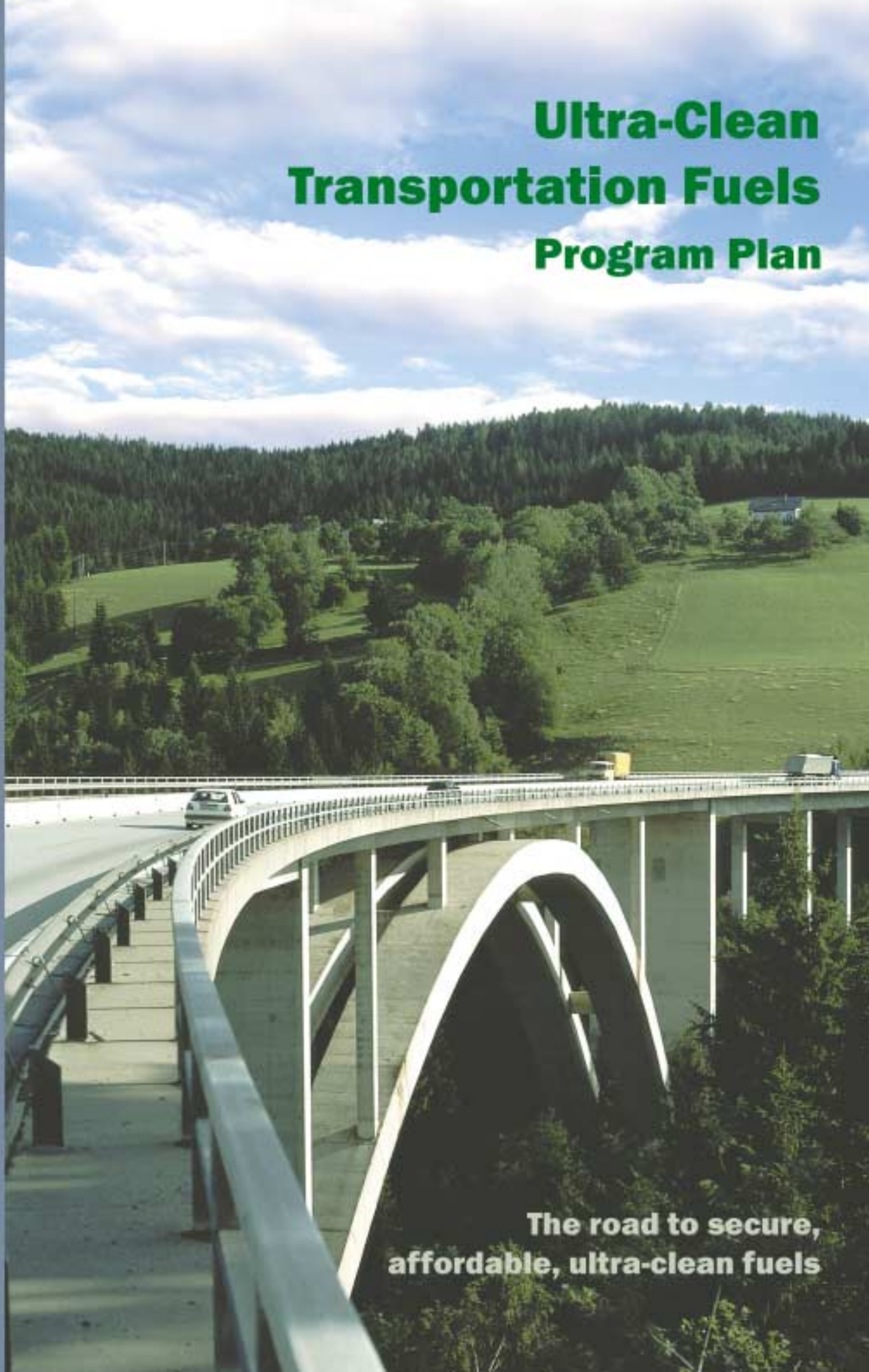
DOE/FE-0430

Ultra-Clean Transportation Fuels

Program Plan



The road to secure, affordable, ultra-clean fuels

U.S. Department of Energy

Mission

The mission of the Ultra-Clean Transportation Fuels (UCTF) Program, in association with industry as a partner, is to develop, demonstrate, and deploy technologies and systems that will ensure the Nation's future transportation fuels, utilized in advanced highway vehicles, which will result in dramatically improved energy security, environmental quality, and economic competitiveness.

Foreword

As we journey into the 21st century, the vehicles that populate our highway transportation system continue to provide our citizens with an unparalleled degree of personal mobility and our Nation with an essential lifeline for the transport of goods. In order to safeguard the personal mobility and maintain the economic vitality of this country, we must ensure that highway vehicles continue to retain the attributes necessary to support their intended transportation missions while simultaneously complying with evolving societal demands for energy security, improved air quality, and industrial competitiveness.

Over the next several years, this Nation will implement new, stricter Federal and state clean air requirements for highway vehicles; encounter more volatile global energy markets; face increased economic competition in the international market for clean highway vehicle and fuels production technologies; and confront the threat of global climate change. Given this emerging situation, it is clear that the U.S. Department of Energy (DOE) must aggressively pursue the research and development (R&D) of advanced technologies for high-efficiency, low-emissions highway vehicles, as well as for the production of ultra-clean fuels required for their operation. Furthermore, it is imperative to accelerate the transition toward the increased use of diversified domestic feedstocks, including those that are renewable, to ensure the sustainability of these ultra-clean transportation fuels.

The DOE is partnering with industry to identify, study, and develop advanced fuels for tomorrow's vehicles, and is utilizing the unique scientific capabilities of our national laboratories. DOE is providing the Federal government's largest technology R&D contribution to the government/industry Partnership for a New Generation of Vehicles and the 21st Century Truck Program. It also is collaborating with the heavy-vehicle industry to develop high-efficiency truck technologies. DOE has signed a compact with the petroleum industry to identify and pursue joint R&D efforts that satisfy common goals. Also, within its integrated Petroleum-Based Fuels, Gas-to-Liquids, and Coal-Based Transportation Fuels Programs, DOE is developing technologies for the production of ultra-clean fuels from petroleum and other fossil energy feedstocks. Additionally, in support of the National Bioenergy Initiative, DOE is conducting a Biofuels Program to develop the technologies necessary for the production of ultra-clean transportation fuels from a broad array of biomass feedstocks.

It is essential that a systems approach be employed to concurrently develop technologies for fuels-sensitive elements of engines and emissions control systems, and for production of ultra-clean fuels. Furthermore, it is imperative that the appropriate elements of the associated R&D programs and activities be coordinated under an overarching collaborative program. DOE's Ultra-Clean Transportation Fuels (UCTF) Program has been conceived for these purposes. Central to the success of the UCTF Program is the implementation of the Program Plan described herein. This program will enhance the Nation's energy security, environmental quality, and economic competitiveness.

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